
Z(ee)+Jets Analysis: unsmearing



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Overview

- **MC sample** (generated by Suyong, reco'd by James):
 - Z + 1jet (Pythia)
 - 800k events
 - pT cut 8GeV
 - Contains only particle jets and MC information
 - No GEANT/d0sim
 - **Stable-parton-bug**
- **Purpose:**
 - Determine particle jet multiplicities w/o smearing jet pt
 - Determine particle jet multiplicities after applying data resolution smearing and jet reco efficiency
 - Ratio will give unsmeareding coefficients
 - Apply unsmeareding coefficients to jet multiplicities in data to unsmeared the xsection



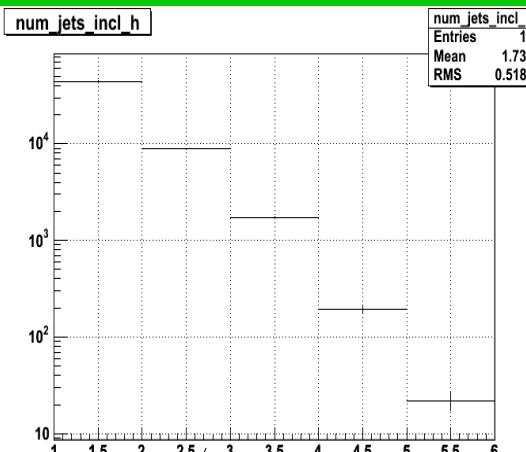
Selection Criteria

- Selecting generated electrons with:
 - $pT > 25\text{GeV}$
 - $|\eta| < 1.1$
 - $75\text{GeV} < M(ee) < 105\text{GeV}$
- Selecting particle jets with:
 - (Smeared) $pT > 20\text{GeV}$
 - $|\eta| < 2.5$
 - No overlapping with Z electrons within dR of 0.4

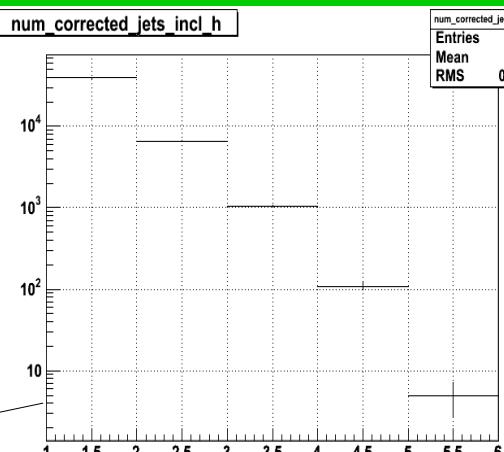


Multiplicities and unsmeared coefficients

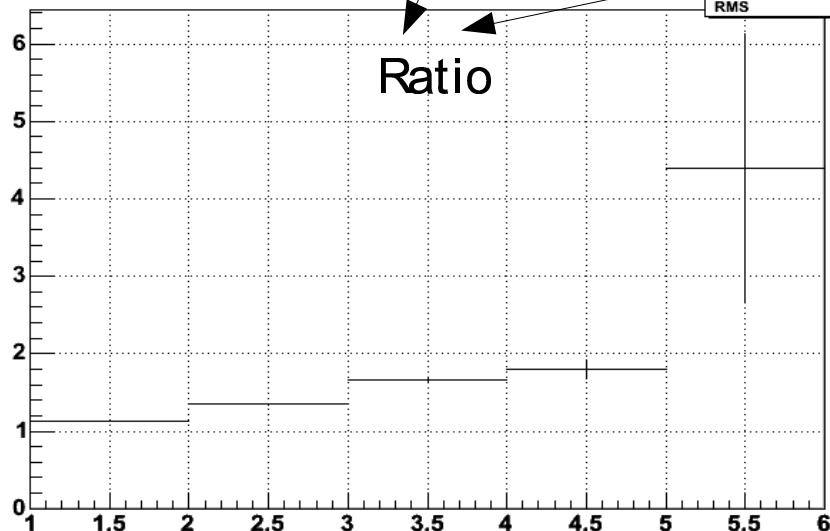
1. select 2 good electrons
2. count particle jets (unsmeared)



1. select 2 good electrons
2. smear jet pt
3. apply jet reco
4. count particle jets (smeared)

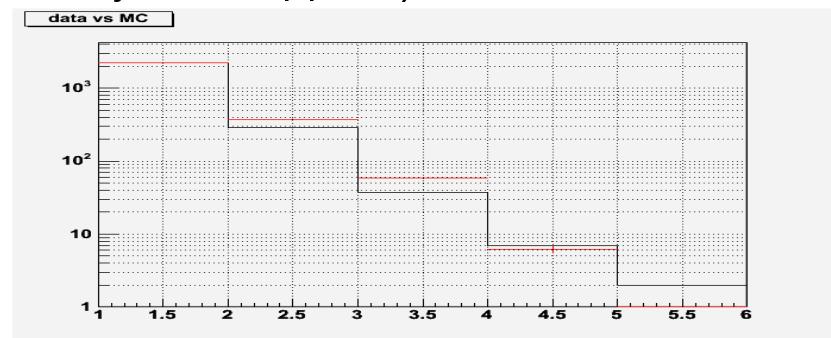


unschmearing_incl_h



Issues:

1. statistics -> bigger sample
2. Z pT correction
3. comparing data with MC (smeared jet reco applied)



todo

- Finish unsmeearing studies
- Jet removal cut correction (jet-electron overlaps)
- Jet promotion correction (jets from extra interactions)
- Error estimation
- Analysis note

